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CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

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EDUCATIONAL NEWS AND EDITORIAL COMMENT

Dismissing a Superintendent

The case of Superintendent John W. Carr, of Bayonne, New Jersey, cannot be passed without commenting on the merits of the individual case and on the lesson which such a case as this teaches for all superintendents of public education in the country. The Board of Education of the city of Bayonne had a fund of money for the erection of a new school building. Mr. Carr discovered what he regarded as irregularities in the arrangements being made for this building. He was confronted with a choice of three courses of action: he could resign and leave those who, as he believed, were planning to defraud the city free to carry out their plans; he could accept the situation as it stood and shut his eyes to the information he had secured; or he could expose those whom he regarded as guilty. He chose to expose those whom he regarded as guilty. Apparently, however, he did not succeed in convincing the community that he had evidence enough to justify his statements. Further than that, in the course of the proceedings the countercharge was brought against him that he had made an effort to secure money illegally for himself. This charge was supported by the sworn testimony of a citizen of Bayonne, and the Board of Education made this testimony the occasion for the dismissal of Superintendent Carr. The case was carried to the State Department of Education by Mr. Carr and his

friends. The State Department, having canvassed the matter to its own satisfaction, pronounced him entirely guiltless of any of the charges made against him. The action of the State Department in this connection was without effect to restore Mr. Carr to his position. If it had been a case of a teacher who was discharged without cause or without adequate evidence to support charges, the authority of the State Department would have been greater than it was in this case.

The interesting fact about this narrative, from the point of view of the profession at large, is that Mr. Carr has absolutely no professional body to which he can go and from which he can secure either support in his own defense or professional acquittal on the charges that have been made against him.

It is quite impossible at this distance to determine the strength of the evidence on the one side or the other. Mr. Carr is well known in the educational world, and it is believed by those who have been associated with him that dishonesty of the type with which he has been charged is entirely impossible for him. It may be that the evidence on which he was acting was inadequate, but it should be remembered that the training of a school superintendent does not always qualify him for a discriminating analysis of evidence and a determination of what will hold in a court of law. Evidently Mr. Carr did not fortify himself with the type of evidence that is demanded to support the charges which he made.

Professional Insurance

In sharp contrast with the kind of situation that exists in this case is the method adopted by the surgeons of this country. The surgeons of this country have long been open to attack from dissatisfied clients and others who take advantage of the uncertainties of surgery to secure financial advantage. In order to protect themselves the surgeons have organized an insurance company, to which they pay a small fee annually. For ten dollars a year a surgeon can secure, through this co-operative organization, the strongest legal advice to protect him against attacks from dissatisfied clients and others. Most of the attacks which would have been made under the old system are never made now, because it is understood that any surgeon can

secure a strong legal backing in the presentation of his case. This assurance that the surgeon is supplied with legal advice is enough to prevent attack.

When one thinks of the vital interests that are in the hands of a school superintendent and of the impossibility which such an officer confronts of producing evidence acceptable to a court on many matters with which he must come in contact, it certainly is desirable that he should have some professional group to which he can turn for protection and support. When the school superintendents of the country realize that they have a right to the same kind of protection that many state departments are now able to supply to the ordinary teacher, and when they realize that a strong professional organization ought to guarantee to every superintendent a hearing of his case, it will become less easy for a board of education to dispose of a superintendent whose activities do not conform to their wishes, at least in those cases where their wishes are not synonymous with the advantage of the community.

The following item from the *Telegraph-Herald*, of Dubuque, Iowa, shows that the efficiency expert has arrived even in the smaller cities:

Another Efficiency Expert

The Board of Education has appointed Mr. H. W. Anderson, of the graduate school of the Department of Education of the University of Iowa, school statistician for the second semester only. The general purpose of this appointment is to provide for more scientific supervision and thereby increase the efficiency of the schools. Mr. Anderson will give his attention exclusively to the work of measuring the results of teaching through the use of standardized tests in the various subjects of the curriculum. Through these tests, which are being used all over the country, we are coming to form standards of achievement for the normal pupil and the normal work of each grade.

The Courtis tests in arithmetic, for instance, which have been given to more than a hundred thousand children in various cities of the United States, have very clearly established what knowledge and skill in arithmetic a child should have at the end of the fourth grade, fifth, sixth, and so on. The same thing is true of penmanship, spelling, and some of the other subjects. The work will lead, therefore, to an elimination of useless and obsolete material, and to a centralization of effort and attention on the vital and essential things in the school course.

From one point of view it means a revival of attention to the three R's, and a larger and more scientific effort to develop in the boys and girls of the schools power and skill in the things they will need in the business and industrial world.

A further purpose of this type of work will be to furnish more exact information as to the individual pupils who need more careful guidance and assistance. The general tendency of the school system is to handle children in the mass. If a child who is naturally slow and backward cannot keep up with the procession he must drop behind. In this way scores of children have been left in the "laggard" class or have dropped out of school entirely through discouragement, because no special effort was made, or, under the circumstances, could be made, to tide them over the difficulty or help them along. One of the large purposes of the school statistician will be to ascertain all the facts regarding children who have difficulties and to render the assistance that is needed.

The aim in this appointment, in short, is to enable the schools to render more effective service to teachers, children, and the home.

Mr. Anderson has been for two and one-half years a graduate student in the school of education in the University of Iowa, received his Master's degree in education a year ago, and is well on his way to his Doctor's degree. He has made a specialty of school measurement work, and has been giving half his time to similar work in the Iowa City schools while carrying on his studies in the university. He was recommended to Superintendent Harris by Dr. Jessup, the head of the Department of Education.

A Junior-Senior High School

The high school of Rochester, New York, is organized under the comprehensive title, "Junior-Senior High School and College." Its program illustrates in a very impressive way the expansion of the middle school so as to take up the work of the seventh and eighth grades and also the work of the Junior college. It is unfortunately impossible to give the program in full. The accompanying schedule for part of the morning will serve, however, to give an idea of the whole (p. 329).

Gary Costs

Some time ago Superintendent Spaulding, of Minneapolis, made a lengthy statement relative to the comparative school costs in Minneapolis under the present system and under a suppositional Gary organization. His conclusions in the particulars of teachers' salaries, overhead charges, investment, and costs incident to the lengthening of the school day were to the effect that Minneapolis under the Gary plan would have to pay 36 per cent more for its schools than at present.

SECTION OF MORNING PROGRAM OF ROCHESTER JUNIOR-SENIOR HIGH SCHOOL AND COLLEGE

H. A. JOHNSON, Superintendent — EDWARD H. SHUEY, Principal

Dept.	Principal and Ec.	Asst. Princ. and Ger.	College Lang.	College Hist.-Eng.	College Sc. and Math.	Nat. Sc. Col. Bot.	Latin	English	Eng. and Latin	English	English	German English
Room Time	Office	11	25	Board Room	5	6	21	22	17	16	18	Teachers' Office
8:30		Ger. II 10–12		College Rhetoric T Th S	College Math. I–II M T W Th F	College Botany M T W Th F S	Latin I 9	Eng. V 12	Latin III 11		Eng. II 8	Eng. I 7
9:05	Office									Assembly		
9:05		Superv. Study					Superv. Study	Superv. Study	Superv. Study		Superv. Study	Superv. Study
9:30												
9:33	Ec. and Salesman. 11–12		College Ger. V M W F College Latin V T Th S	Consultation	College Chem. (Lab.) M W F	Scien. III 11	Latin IV 12	Eng. III 9	Eng. V 11	Eng. II 8	Eng. III 9	Consult.
10:05		Assembly										
10:05	Superv. Study					Superv. Study	Superv. Study	Superv. Study	Superv. Study	Superv. Study	Superv. Study	
10:30												
10:33	Superv.	Ger. III 9–10			College Chem. Lab. M W F Rec. T Th	Scien. II 10	Latin I 9	Vocation. Guidance and School Paper	Eng. V 11	Eng. IV 10	Eng. II 8	Eng. I 7
11:05												
11:05		Superv. Study				Superv. Study	Superv. Study		Superv. Study	Superv. Study	Superv. Study	Superv. Study
11:30												

As was to be expected, this finding did not go unchallenged. In the issue of *School and Society* for January 22, Howard W. Nudd, Director of the Public Education Association of New York City, went over the case with a different spirit and arrived at a different result. He discovered that Dr. Spaulding failed to take into consideration in his computations and conclusions such matters as the superior educational facilities of the Gary schools; the smaller number of pupils per teacher; the fact that at present the Gary plant is running at half-capacity only; and the fact that the Gary plan, though calling for a longer school day, does not require more hours of work from the teachers. When, according to Mr. Nudd's calculations, due allowance is made for all these factors in the comparison of Gary and Minneapolis school costs, it results in the demonstration that Minneapolis could run its schools on the Gary plan with all the associated modern improvements at a cost per pupil actually less than the present expenditure.

Such calculations and countercalculations are of interest to most of the educational world because they exhibit two facts: First, all superintendents are on the defensive in these days because boards of education believe that the Gary system has demonstrated that schools can be run at a greatly reduced cost. Mr. Spaulding is compelled, therefore, to explain his costs in the light of the Gary example. The second fact is that Gary's is not an inexpensive system. The money spent at Gary is not less than the money spent elsewhere. There are many experiments going on at Gary; all of them cost money. In the aggregate they cost as much as it costs to run other systems.

All this is of interest to the student of education because it leads him to the conclusion that ultimately school experiments will be evaluated on educational rather than financial grounds.

School Credits for Home Work

If one may judge from the enthusiasm with which Superintendent S. R. Shear, of Poughkeepsie, New York, in a recent address before the New York State Council of Superintendents advocated giving school credit for home duties, the plan has proved successful in the system over which he has charge.

The method of operation there consists in giving to each participating elementary-school pupil on Friday mornings a card upon which is printed a list of home duties whose properly reported performance will entitle the holder to certain school credits. The card is returned on Mondays, ten days after it is received, with the amount of time spent at various tasks recorded and the whole report endorsed by parent or guardian. The rules provide that "home-duties credits will count as much in the promotion of a child as any regular subject in the school, and the pupil will be marked on a scale of 100 for actual work of not less than thirty minutes a day." The list of duties includes such things as work in garden; cleaning yard; sprinkling lawn; shoveling snow; washing; bedroom work; preparing meals; caring for the baby; running errands; repair work; home sewing; paper routes; practicing music-lessons; care of automobiles. Space is provided on the card for a report of other duties than those specified.

Superintendent Shear advances nine or ten reasons for the institution of such a plan. He maintains that it dignifies labor, develops the vicarious spirit, creates a sense of responsibility, teaches how to work, leads to practical manual training, equalizes conditions between pupils of different economic levels, makes for home-making, increases sympathy between home and school, keeps children off the streets, out of the poolrooms, and away from the "movies," lessens tardiness and absence, and, finally, wonderfully improves the morals of the children. Some of these, doubtless, might be hard to substantiate very definitely, but they have weight nevertheless as coming from a practical school man who has had actual experience with the plan he is supporting.

New York Tests

In the months of March and June, 1915, examinations in the various subjects were conducted in the three types of elementary schools in New York City for the purpose of determining the relative efficiency of the work done in these schools. The following statement by Superintendent Maxwell, describing the method and results of the examinations, is of interest, because of possible bearing on the further extension of the Gary plan:

The design of these tests was to determine how results in those studies which all thinking people agree should form the chief field of elementary education compare in the three types of elementary schools—the traditiona type, the Ettinger type, and the Gary type. The schools of the traditional type were selected each because it has a pupil population as nearly as possible similar to that in one of the two other classes of schools. Two examinations, separated by an interval of three months, and with questions as nearly equivalent as possible, were given, in order that the tests should be not only of acquired knowledge, but also of progress.

The results show that, of the three types, the traditional schools made the best showing, the "pre-vocational" schools stood second, and the Gary schools stood third. While I should be the last to claim that the test is final, or that it renders an effective decision against the Gary system for this city, it is fair to say that it raises a strong presumption against the general introduction of the Gary system into this city. The conclusion obviously is that neither the Gary system nor the "pre-vocational" system should be further extended until the schools in which they are being tried make a better exhibition of efficiency.

COMPARATIVE PERCENTAGES MADE IN THE TESTS

	Gary	Pre-vocational	Regular
Arithmetic	42.7	51.9	58.3
Spelling	63.4	70.4	71.8
Geography	57.1	58.0	62.2
History	52.1	53.8	53.5
Grammar	29.0	32.3	36.3
All subjects	49.1	54.0	57.7

PERCENTAGES OF PUPILS SHOWING IMPROVEMENT AFTER THREE MONTHS

	Gary	Pre-vocational	Regular
Arithmetic	40.7	47.6	54.3
Spelling	52.8	63.7	63.0
Geography	58.0	53.4	57.7
History	72.3	67.2	63.2
Grammar	55.8	65.8	62.9

Naturalization School in Indianapolis

At a recent meeting of the board of school commissioners of Indianapolis it was decided that two rooms in one of the public-school buildings be specially fitted up to serve as a "naturalization school" for the foreigners of that city. The United States Bureau of Immigration, which is largely responsible for the idea, is co-operating with the

Superintendent of Schools by furnishing a list of the foreigners who should attend the school. It is thought by those competent to judge that from 150 to 200 persons will avail themselves of the opportunity thus offered.

The school will be conducted in the evening. Instruction will be given in English and in other subjects selected to prepare foreigners for the naturalization examinations. The object of this instruction is twofold: in the first place, it will enable the foreigner to pass the naturalization tests and will prepare him in some degree for American citizenship; in the second place, it will protect him from certain persons who make a practice of exploiting foreigners in preparing them for these examinations.

The presence among us of persons from foreign countries, where language, customs, and government are different from our own, clearly imposes upon us a public duty to do something in the way of preparing these immigrants for citizenship in their adopted country. It is not enough to educate the children; something must be done for the adults as well, and this something must be taken up systematically and vigorously.

Vocational Guidance in Rochester

The Board of Education of Rochester, New York, has an apprenticeship agreement with the Master Painters and House Decorators' Association, the Master Plumbers' Association, the Master Bakers' Association, the Rochester Typothetae, the Machine Employers, the Electrical Workers, and the Wood Workers. The school system is attempting to organize its work so that pupils shall be placed in good positions at the completion of the technical courses offered in the Rochester public schools. The first problem is that of distributing pupils wisely in the courses. The board provides for a meeting of grammar-school graduates a few days before the end of the first semester. For this meeting two types of information are needed: first, information in regard to the general rating and the probable destination of every pupil who will finish the grammar-school courses; second, information about industries. These types of information are collected before the meeting and are used then and in personal conferences.

Of much interest are four bulletins, compiled by the Department of Vocational Education, giving definite data in regard to the different industries: those for the boys on the *Machine Industry* and the *Woodworking Industry*, and for the girls on the *Clothing Industry for Girls* and the *Collar Industries*. The information deals with the various divisions of the trades or industries, the number of workers hired, the kinds of machine- and handwork that are done, the pay received and the opportunities for advancement, and, finally, the kind of boy or girl desired. Based on thoroughly scientific investigation, the bulletins are valuable in directing the minds of children toward the necessity of preparation.

A single extract illustrates the forceful character of the bulletins:

> During the past winter an investigation was made of the working conditions of all boys who during the past two years have left school at the age of fourteen to go to work. The boy who left grammar school and got a job, at the end of six months averaged $4.70 per week; at the end of a year his average was $5.32 per week. The boy who left grammar school and attended the Rochester Shop School for six months and then got a job drew on the average for the first week $6.13. After remaining at the shop school a year and then going to work, the first week's wages were $9.00, showing beyond a doubt that trade education pays. . . . . The ordinary day-laborer earns from $1.50 to $2.00 a day for perhaps 250 days a year, or about $500. A cabinet-maker earns $3.00 a day and has steady work the entire year, thus earning about $900.00 at the least. In thirty years' time he has added to the value of himself $12,000.00.

Child Labor

In connection with the Keating-Owen bill, which is before Congress at the present time, and is designed to exclude the products of child labor from interstate commerce, a statement made by Dr. Felix Adler is significant. According to this statement there are 895,000 children between the ages of ten and thirteen years, inclusive, and 1,000,000 children of fourteen and fifteen years, employed for somebody's gain in the United States.

It is certainly to be hoped that this bill will be passed by the present Congress. A matter so vital to the welfare of the nation should not be left entirely to the discretion of the individual states when it is constitutionally possible to regulate it by the passage of a federal law.

Community Centers in Chicago

During the past year less than $6,000 was expended in the support of community centers by the school authorities in Chicago. That the advantage to the city of such an expenditure has been clearly recognized is indicated by the recommendation of Superintendent Shoop that the sum of $45,000 be appropriated to carry forward community-center work during the ensuing year. Although this proposal has met with some opposition on the part of certain members of the board, on the ground that it is illegal to appropriate for community centers from funds provided for educational purposes, the appropriation will probably be made.

Model Rural Schools

Looking to the betterment of the county school systems of the South, the Southern Educational Association has opened an experiment in model school organization and management in Pearl River County, Mississippi, with the aid of the General Education Board. Among the interesting features of the plan are the county agricultural high school, school health officers who shall work not only in the schools but in the homes, attempting to educate the people and to improve sanitary conditions, a county school hospital, county farm and home demonstrators, and an assistant county superintendent whose entire time is devoted to visiting schools and discharging such other duties as usually are incumbent on a city superintendent. Already many of the schools of the county have been consolidated, three or four joining in building a central school. The General Education Board is contributing $7,200 the first year, and the county is to contribute $3,800.

An American Congress of Child Welfare Workers

During July of this year a unique and very interesting gathering will be held in Tucumán, Argentine Republic. It will be the first American Congress on Child Welfare, to which will be invited representatives from twenty-one South American republics and from the countries of North America as well. This conference is to be held to commemorate the one-hundredth anniversary of Argentine independence.

The congress will be divided into seven sections—law, industrial legislation, aid to mothers and children, hygiene, education, psychology, and sociology. Organizations engaged in child welfare work are invited to send delegates and to exhibit charters and other pertinent material of interest. The executive committee is composed of the leading social workers of the Argentine. Other South American countries have appointed co-operating committees.

EDUCATIONAL WRITINGS

Six volumes of the report of the Cleveland Survey have appeared during the last month. One of these volumes deals with the problem of finance.[1] A complete understanding of the financial situation in the city of Cleveland calls for some reference to the general financial situation in the state of Ohio. Legislation was passed some years ago limiting the amount of taxation in any community to ten mills. In common with other public institutions, the schools have suffered by this drastic limitation upon the taxes which can be levied in the community. The result is that the schools have been running behind at a rate which seems to anyone who examines the figure to be disastrous. The schools of Cleveland are not running behind as rapidly as the general government of the city. It seems to be the policy of Ohio municipalities to try to live under existing legislation until there shall be a general breakdown in the finances of all the municipalities in the state. The legislature will then have to pass remedial measures and the schools, together with other departments of the government, will make up by additional taxes for the arrearages that have now accumulated.

A second general problem which confronts the student of finance in the city of Cleveland is the historical problem of the division of power within that school system. There is a business director and a superintendent of educational affairs. The business director has unusual powers. In many cases his decision and his initiative reach over into the domain ordinarily regarded as the educational field pure and simple. For example, in all matters of physical education the director has an influence that is more important than that of the superintendent. The volume on finance is brought face to face, therefore, with the general question of the distribution of control. The comments which are made in this volume indicate

[1] *Cleveland Education Survey: Financing the Public Schools.* By Earle Clark. Published by the Survey Committee of the Cleveland Foundation, 1915. Pp. 133.

that the members of the survey staff find the present organization of the Cleveland schools objectionable.

It is clear from the evidence presented in this study that Cleveland is expending relatively more money in business organization and in the conduct of the material side of the school system than other cities of the same size; while it is expending relatively less in the control of its educational affairs. The exact facts in this connection are as follows: Cleveland is spending per child in average daily attendance $33.64 for educational purposes and $10.10 for business purposes. These figures place Cleveland in the fifteenth position from the top among seventeen cities in the matter of educational expenditures but fourth from the top in expenditures for business purposes.

The most important method employed in this volume of evaluating the organization at Cleveland is the comparative method. The material from other cities which is reported by the Commissioner of Education was carefully tabulated and Cleveland's position in the general series of cities was worked out. P. 63 gives a summary of the findings based on this comparison.

> Summarizing the discussion of the adequacy of expenditure, it may be said that the outstanding fact brought out by the comparison of cities is that disbursements per unit of population and of wealth being of but slight importance as compared with disbursements per child in average daily attendance, Cleveland's expenditure for all school purposes, measured by prevailing standards, is relatively low. Cleveland spends for permanent improvements in the school plant rather less per child in average daily attendance than does the average city. For operation and maintenance, also, Cleveland's total expenditure is smaller than that of the average city. While spending more than most cities for four important items of operation and maintenance, Cleveland spends less than the average city for five items, and the items in which the city ranks low are those which call for the largest disbursements. Relatively small expenditures for such purposes as teachers' salaries and the salaries of principals are by no means offset by relatively high expenditures for wages of janitors and for maintenance.
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> While Cleveland spends more for certain items than does the average city, there is no reason to believe that these expenditures are not warranted by conditions and needs. It appears, on the other hand, that expenditures for certain items are too low to insure the quality of educational service required. The situation shown to exist, seems to call for an increase rather than a diminution of total expenditures.

The volume furnishes cities of the general class of Cleveland with a very fair basis for financial comparisons, and in general the study indicates the desirability of placing one community in a position to check up its financial operations with those of other communities of the same class.

A second volume[1] deals with the familiar conditions of overcrowded schools. Superintendent Hartwell's work at Kalamazoo is familiar to readers of this Journal from the articles which he has been publishing in recent numbers. The book contains in brief outline references to the work which has been carried on at Kalamazoo, and it also contains a thoroughgoing analysis of the situation at Gary.

The situation at Gary is analyzed by calling attention to the fact that the possibility of accommodating more pupils in the Gary schools is due in some measure to the addition of shops, playgrounds, auditoriums, and gymnasiums in the new school buildings; but in addition to these enlargements of the buildings there are also other lines of adjustment which have nothing to do with the enlarged buildings. Thus, children are allowed to come to school at different hours in the day. The libraries of the city, the churches, and the Y.M.C.A. are brought into co-operation with the schools, so that the school is freed for a certain number of hours in the day of the responsibility for giving instruction to the children. Any school system which cannot employ all of the different devices that are being tried out at Gary will find that it is quite impossible to accommodate the number of children frequently referred to in connection with the discussions of the Gary plan.

At Kalamazoo no effort was made to utilize the churches for any part of the school day; nor was the public library utilized as it is in Gary. The simpler problem of utilizing the school building more completely by shifting the children in groups from one kind of activity to another was worked out in a somewhat less highly departmentalized fashion than in Gary. The results are very much more modest in the number of children who can be accommodated.

[1] *Cleveland Education Survey: Overcrowded Schools and the Platoon Plan.* By Shattuck O. Hartwell. Published by the Survey Committee of the Cleveland Foundation, 1916. Pp. 77.

The plan which Superintendent Hartwell discusses and recommends for adoption in Cleveland is called the platoon plan. The advantages of this plan are set forth on p. 21 as follows:

1. Better instruction and improved results in special branches without increased expense and without sacrificing the regular subjects of the curriculum.
2. The filling of important gaps in the present curriculum without the increase in cost that often prohibits such additions.
3. A more constant use of the whole school building and especially increased use of facilities usually considered "extras," such as auditoriums, gymnasiums, manual-training rooms, and the like.
4. A larger enrolment within the same building.

The plan as worked out is not a complete departmental plan, but contemplates instruction of the pupils by one teacher in all the subjects which may be described as academic subjects. After receiving several hours of instruction in the routine work of the school, children are transferred to the shops, playgrounds, and other activities such as music or auditorium work, and the teacher comes in contact with a second group of children whom she keeps for a considerable period of time and carries through a number of the ordinary academic subjects.

The difficulties of working out such an arrangement as this are discussed in detail. Attention is drawn to the fact that no one should undertake the platoon plan of organization until he has prepared beforehand very carefully a number of matters. Thus, the equipment of special rooms must be attended to. If a new building is being erected, it is entirely possible to include these special rooms in the general plan; but if an old building is to be adapted, it must be transformed by putting in new furniture and in some cases by remodeling the rooms themselves. There must be places for the storage of the pupils' books. Wardrobes, furniture, and the signal system must all be taken care of. Attendance must be recorded, and there must be a careful readjustment of the sizes of the classes so as to provide each teacher with a reasonable number of pupils to teach each day. The costs of effecting these changes are discussed, first, in general, and then with special reference to the changes necessary in the Cleveland schools in order to adopt the plan. It may be said that the plan is being adopted at the present time in one of the Cleveland schools.

Mr. Perry[1] has contributed another of his stimulating discussion of the use of the school plant. Mr. Perry begins by describing the astonishment which anyone must experience who compares the school of today and its various different forms of activity with the district schoolhouse of two generations ago. Enlarging on this contrast, he points out the possibility of making other changes that shall keep the school building open at night and shall make the school equipment available for social activities and for the training of adults.

This book, more than any other in the collection, can be described as a general plea to the citizens for an enlargement of school work. It contains some reference to the experiences of Cleveland itself, and it is shown that Cleveland has been steadily moving in the direction of a larger use of the school plant; but in the main the book is an exhortation to the taking up of certain forms of activity which are relatively little developed at the present time in Cleveland.

This volume, like the one in finance, comes back to one of the fundamental questions of school control. All of these activities that are suggested must be viewed, if they are to be carried on successfully, from the point of view of their educational usefulness. At the present time the extension of the use of the plant is under the control of the business manager of the schools. Mr. Perry believes that it would be very much better for the school system if the educational authorities were put in charge of this line of work.

Cleveland has had a very interesting history in the matter of school buildings. Several of the notable experiments in the construction of schoolhouses had their origin in Cleveland. At the present time one can see in the buildings of Cleveland many examples of the earlier experiments which have been tried. Several of the schools have the great central hall which was characteristic of an earlier period. Furthermore, Cleveland has kept up its school plant, perhaps, better than any other great school

[1] *Cleveland Education Survey: Educational Extension.* By Clarence Arthur Perry. Published by the Survey Committee of the Cleveland Foundation, 1916. Pp. 115.

system in the country. In the newest buildings that have been erected all of the most modern elements of schoolhouse equipment have been included in the plans.

The statement of the situation in Cleveland, therefore, furnishes a very good opportunity to discuss the whole matter of school plants. The volume[1] dealing with school buildings contains a number of half-tones, showing new buildings and their special equipments. There is a table showing the proper distribution of floor space, air space, lighting, etc. This book will serve not only as an account of the present situation in Cleveland, but also as a general text for classes dealing with schoolhouses as a part of their educational courses.

Another volume[2] deals with recreation as a part of school work. This volume is full of interesting diagrammatic figures which show the number of boys and girls who engage in the different kinds of recreation. The general impression made by the investigations carried on in Cleveland is that, while the children of Cleveland play in the usual fashion, they get relatively little encouragement and relatively little organization of their activities through the schools. A number of the schools with playgrounds apparently make very little use of these playgrounds. There is very little supervision of play in the recess and apparently a lack of interest in the use of the gymnasiums and swimming tanks which the architects have included in the elaborate new buildings of the city.

Cleveland has long been recognized as a city devoted to the traditional type of education. There is a great deal of interest in the city in reading and number work, but the following quotation from p. 19 makes it appear that there is still a failure in that city to recognize the importance of play.

"Pupils will not be allowed to . . . . remain on or revisit the premises after dismissal of the school, except by special permission of the principal of the building." So read the Rules of the Board of Education. Whether

[1] *Cleveland Education Survey: School Buildings and Equipment.* By Leonard P. Ayres and May Ayres. Published by the Survey Committee of the Cleveland Foundation, 1916. Pp. 117.

[2] *Cleveland Education Survey: Education through Recreation.* By George E. Johnson. Published by the Survey Committee of the Cleveland Foundation, 1916. Pp. 94.

under the circumstances this is a wise rule or not, it suggests disuse of the school playgrounds, and generally, though happily not universally, the suggestion is taken and children are accustomed to leaving the school premises out of their minds in their hours of leisure, and to substituting the street, the vacant lot, the back yard, and the moving-picture show instead.

Another great "unwelcome" is the playground apparatus entirely denuded during the school year, all except the bare frames being put away in storage. As if to add to the gloom of the bare appearance of the playground, one sees the worn and empty sand-bins, from which the children, as one principal reported, had "carried away the remaining sand in tin cans and pails that they might play with it at home." Unthinkable as "stripped apparatus" is in the vacation school period, it is really more pathetic and inconsistent in term time, when the freedom of activity is curtailed and there is even greater need than in vacation time to invite children from sedentary to active occupation.

Mr. Johnson has put forth a vigorous argument for a complete change in attitude on the part of the schools. It is not enough that athletics and physical education shall be introduced in the high schools; this is a problem which belongs to the elementary school. One paragraph from his statement of the case is worth quoting because of its general significance even outside of Cleveland (p. 59):

On the whole, it may be said that the influence of the school is deplorably slight in the matter of the hardy group games for elementary school boys, and it should be emphatically stated over and over again that it is in the elementary school period that the school can catch the great majority of boys. The street does not wait for the high school age—it gets them far younger. The gang does not wait—it is right on hand at the ages of eight or ten, and grips very hard before the high school age. Nature does not wait—emotion, impulses, capacities, opportunities, all come in overwhelming array long before the high school doors open for the relatively few who enter. Why should the school despise despatch, ignore opportunity, and neglect so completely in this matter the boys and girls who pass so young beyond its influence to the burdens of a wage-earning life?

One other item may be quoted from this book as indicating a situation which is typical of all modern cities. The extent to which school children go to the moving-picture shows has attracted attention again and again on the part of those who are interested in a better organization of play and recreation within the schools. The facts for Cleveland are set forth in this paragraph (p. 76):

But by far the most striking evidence of the dramatic interest is seen in the attendance record of pupils at the moving pictures. Seventy-eight per

cent of the boys of the elementary school are accustomed to attend the movies, and 84 per cent of the girls. These children attend, on the average, three times in every two weeks. This is more frequent than the attendance that has been estimated for the general population of New York City—once a week; or for Cleveland—once in every six days. Twenty-four per cent of the boys attend the vaudeville as well, and 30 per cent of the girls. The average number of times the boys and girls attend the vaudeville is a little less than once a week. Besides, 18 per cent of the boys attend the regular theater over twice a month, and 21 per cent of the girls over once a month.

Eighty-nine per cent of high-school boys are accustomed to attend moving pictures, and 91 per cent of high-school girls. The boys go, on the average, three times in two weeks, and the girls a little oftener than once a week. Sixty-seven per cent of the boys attend the vaudeville, and 59 per cent of the girls. The average attendance of boys and girls is once in two weeks. Forty-eight per cent of the boys attend the regular theater, and 63 per cent of the girls. These boys attend nearly twice a month, and the girls over once a month.

Another volume[1] reports the results of careful quantitative measurements of the work in the classes. This volume is twice as large as any of the earlier volumes and includes the work of most of members of the educational staff in the survey. The members of the staff visited 1,553 classes and made records of their observations. These records, however, play a very small part in the report itself. They furnish the background but not the content for the discussions. The discussions are, so far as possible, based upon definite returns which were secured by going through the classes in a series of tests and by reference to the actual records of the schools themselves. The body of evidence which is here accumulated with regard to the efficiency of the school system is entirely impersonal and free from the kinds of error which might creep into personal inspection. Indeed, the whole purpose of this volume may be expressed in the statement that it attempts to give an objective background for all of the judgments which are expressed.

The book opens with a tabulation of the non-promotions in the school system for each grade for a period of years. For the last three years the number of non-promotions in the third grade has

[1] *Cleveland Education Survey: Measuring the Work of the Public Schools.* By Charles H. Judd. Published by the Survey Committee of the Cleveland Foundation, 1916. Pp. 288.

exceeded the number of non-promotions in the second grade. In like fashion, the non-promotions in the fourth and fifth grades have exceeded the non-promotions in the grades preceding. The steady rise of the non-promotions throughout the middle grades of the schools is an impressive fact which, of course, calls for further investigation.

The Superintendent's report prints the statistics with regard to failures in particular subjects. When these statistics are compiled for reading, it is found that the number of failures in successive grades in reading constantly diminishes. This is what might be naturally expected of any subject that is taught throughout the school. Those children who have difficulty in reading are discovered in the lower grades. They are either eliminated or their difficulties are overcome through instruction, and the number of failures in reading in the subsequent grades will consequently decrease steadily.

On the other hand, when the failures in certain other subjects are examined, it is found that they increase in later years. Arithmetic is the most notable example of this type. The number of failures in arithmetic is very large in the third grade. It increases in the fourth and fifth grades and it remains at a very high level in the sixth grade. It is to be noted that the course in arithmetic in the Cleveland schools was changed at the opening of this school year. The compilation of the results for earlier years will serve, therefore, as a stimulating example on which the supervisors of the school system may base an examination of the new course. If it is found that the number of failures in arithmetic decreases very largely with the adoption of the new course, that will furnish striking evidence that the modifications in the course were along the lines required by the needs of the children.

Following this examination of the records of the school system itself are reports of four series of tests. Handwriting, spelling, arithmetic, and reading were thoroughly tested. The handwriting tests dealt with speed and quality of writing. The results were compiled in such a way as to show the intimate relation between speed and quality. All of the grades above the fifth were examined and a table is presented in which the relation between

speed and quality is shown. Excessive speed results in a deterioration of quality; on the other hand, the effort to secure a high quality of writing results in very slow rate. The middle areas where rate and quality do not seem to interfere with each other can be defined in terms of the practices of the Cleveland schools. This diagram does not furnish a valid basis for all school systems, but it suggests a method by which schools may define a relation which is of the highest importance.

A second study which was made in connection with the writing tests was a study of the characteristics of different grades in the same school. If the sixth grade makes progress both in quality and in rate of handwriting, it ought to stand above the fifth grade in both of these respects; the seventh grade should, in turn, be an improvement in both respects over the sixth grade, and so on. It was found, in fact, that some schools showed this steady progress from grade to grade in both characteristics, while other schools showed very great emphasis upon one characteristic and a neglect of the other. Thus, a certain school improved steadily in quality, but made practically no gain from the fifth grade on in the speed of handwriting. When the results for different schools were compiled in this fashion, it was possible to show that many schools evidently are proceeding without any clear definition of the aim of instruction. A higher grade in some cases is inferior both in quality and in speed when compared with a lower grade.

The spelling tests brought out the familiar fact that spelling is very largely related to the maturity of the students. The material employed in these tests was taken from Ayres's Spelling Scale, and no difference of importance was discovered when the lists of words were given as parts of sentences on the one hand or as parts of separate lists on the other.

The arithmetic tests differ from any which have been employed up to this time. They consisted of spiral series of exercises in which addition of different degrees of difficulty appeared at different levels in the test. Thus, the first exercises of the test were in the addition of simple figures. Later, addition of short columns of figures was required. Third, the addition of long columns was required, and finally, in a fourth section of the test, the addition

of columns of figures requiring the carrying forward of results was required. In the same fashion, subtraction, multiplication, and division passed through a series of increasingly complex forms. Fractions were also introduced. This series of increasingly complex exercises made it possible to determine how far each grade could go in the solution of different kinds of problems. The time element was not so much emphasized as in the common arithmetical tests. The time element was introduced in that the children were allowed thirty seconds to work on addition problems. The number of such problems solved could then be counted and made a part of the score; but their progress from the addition exercise to the other exercises made it possible to compare the different grades quite apart from the time standard which was set up in the different parts of the test. The results make it possible to analyze the whole subject of arithmetic into a number of different levels of intellectual complexity. A study of these results makes it clear that arithmetic is not a single subject, but a series of exercises calling upon the student for many different types of mental activity. Suggestions with regard to the organization of the course of study can be derived from such an analysis of the arithmetic processes.

The tests in reading are more extensive than any tests which have been tried before. They make it perfectly clear that there is a difference of first importance between oral and silent reading. They show that classes which are very much alike in the powers of oral reading are very divergent in the powers of different members of the class in silent reading. Furthermore, these tests bring out in a very interesting way the relation between the rate of reading and the power of reproduction. In opposition to the results found in the handwriting test, it was here found that the rate of reading is closely related to the power of reproduction, not opposed to it. Fluent readers are the ones who get the most meaning out of the passages which they read.

The reading tests also furnished very interesting ground for a criticism of the type of reading instruction which goes on in Cleveland schools. The reading in the lower grades is evidently carried on with a good deal of emphasis on the form of expression and with less emphasis on the interpretation of meaning. The

result is that Cleveland is behind other cities with which a comparison could be instituted in the matter of the interpretation of the matter which is read in the classroom.

The final chapters of the report deal with the relations between the elementary schools and the high schools and with the various high schools of the city system. It was shown that those students who do good work in elementary school and receive a high grade in these schools are very much more likely to go to the high schools than students who receive poor grades in the eighth grade. If all of the graduates of the eighth grade are divided so that the highest third, the middle third, and the lowest third are numerically equal, it appears that 75 per cent of the highest third go into high school, while only 48 per cent of the lowest third enter the high schools. The characteristics of individual elementary schools in sending students to high school can be examined and it was found that there is great divergence in the practices of the different elementary schools.

It will perhaps not be out of place to mention briefly some of the main results of the high school investigation. Cleveland is especially interesting as an example of the separate organization of technical and academic schools. Some years ago Cleveland gave up the effort to develop cosmopolitan high schools and, as distinguished from Cincinnati and St. Louis, opened schools for technical students and commercial students in buildings entirely separate from the schools which give academic training. The technical and commercial schools have developed very rapidly, while the academic schools have practically stood still in point of attendance. There has grown up in the city a great deal of competition between these different types of school and partisan feeling runs high. Some hold that the cosmopolitan school would be less efficient than the present separate schools, while others are critical of the growth of the technical and commercial schools and the apparent lack of growth in the academic schools. All of the findings of the survey go to emphasize the lack of organization and supervision within these high schools. Their courses are evidently managed in a very different spirit and with different standards of efficiency. The survey is very clear in its pronouncements in favor

of an enlargement of all of the courses so that students may have in each high school those opportunities which are offered by a cosmopolitan type of organization.

Brief reference is also made in the report to the problems of the new junior high school. Two such schools were opened with the beginning of this school year. The readjustment of subject-matter and the relating of these schools to the high school constitute problems that apparently have not been solved at the present time. It is interesting to note, among other elements of the situation, that the Board of Education has assumed the function of dictating the course of study and the textbooks that shall be employed, thus handicapping very seriously the officers who are in charge of these classes in their effort to organize the work of these schools with direct reference to the needs of the pupils.

In a lengthy appendix all of the forms used in the tests are reproduced so that other schools may utilize the methods of this survey.

The remaining volumes of the educational survey are soon to appear, and then will follow a series of volumes on the industrial opportunities of the city and the educational problems which arise out of the examination of these industries.

STATEMENT OF ORGANIZATION IN KALAMAZOO PUBLIC SCHOOLS. II.—*Concluded*

S. O. HARTWELL
Superintendent of Schools, Muskegon, Michigan, Sometime Superintendent at Kalamazoo

EQUIPMENT

The art, music, and literature rooms are arranged to accommodate pupils of varied size and age, since the one teacher may have groups all the way from the second to the sixth or eighth grade. In the music room—where little pencil or desk work needs to be done—recitation benches or tablet-arm chairs of two or three sizes work very well. In the literature rooms we have had the best success with movable tablet-arm chairs of two different sizes.

When two groups are accommodated in one room, provision is made for storing two sets of books. It is not practical to do that in one desk. Several rooms have been equipped with galvanized-iron boxes. They are made large enough to accommodate a set of books, the width being regulated by the size of the geography texts. These boxes are placed in racks and used differently in different rooms. Sometimes the pupils are sent to the racks for their books when they have the use of the classroom; sometimes the teacher prefers to have the pupil take his box of books to the desk with him. Details can be managed in various ways, but failure to make provision for the extra books is quite sure to bring serious objection to the whole plan.

ADVANTAGES

The main ends to be secured have already been noted in discussing the four points mentioned above. Naturally, all these are considered as advantages, but a few other advantages secured by the plan are worthy of mention:

1. *Numbers.*—The usual conditions of grade work at present involve too large classes for each teacher. This problem must be

met irrespective of this semi-departmental method of work. There is no great difficulty in having each regular teacher care for two groups of maximum size. As a matter of fact, groups bringing the average number of pupils per regular teacher above 80 are avoided if possible, although 90 is sometimes reached. That is, each regular teacher takes care of from 35 to 45 pupils for each ninety-minute period (one-half the regular morning session) and is thus responsible for from 70 to 90 pupils in regular work each day. This double arrangement frequently brings to each regular teacher two groups or classes of the same grade, e. g., a VA and a VB; but occasionally a half-day group will combine two sets of pupils from adjacent half-grades, as, for example, the last half of the third and the first half of the fourth, so that one teacher will be giving instruction in three half-grades of the curriculum. While we have tried to avoid this above the fourth grade, it presents no further difficulty that might arise from the same problem under ordinary conditions.

2. *The use of time.*—In practice the day is more full of variety for pupils and for most of the teachers. It does not become tedious. The breaks in the customary routine and the relaxation gained through exercise help, rather than hinder, the program and more can be accomplished. In the regular rooms, each teacher, having fewer subjects, can concentrate her effort. For the teachers especially the result of this concentration has been helpful—so helpful that the slightly longer day has given little difficulty. The range of demand on the teachers' resources of knowledge and preparations is considerably reduced. Worry is proportionately less.

3. *Supervision.*—Less supervision is needed—not only less in time given to an individual teacher, but much less in total amount. Thus the overhead charge for supervision is considerably reduced. Of the seven supervisors employed during this last year, only one has given her full time to that line of work. The directors of physical training, of music, and of drawing have given more than two-fifths of the weekly schedule to class work. For example, the supervisor of drawing, instead of having responsibility for from 80 to 100 teachers in the grades, has had under her direction a group of about a dozen special teachers and has given a little oversight

to the work of the first-grade teachers. She has also taken charge of drawing in the senior high school and has herself given nearly one-half time to class instruction.

4. *Material.*—The practical saving in supplies and equipment for instruction is met through grouping the classes in one kind of work in a given room. The equipment needed, for instance in the art room, is very much less than the total equipment that would be required in the different rooms to accommodate the art classes of all grades. The demand for deskbooks and reference books for teachers, the supply of globes, maps, etc., and especially the supply of supplementary reading are considerably reduced.

5. *Saving in equipment.*—There is some saving in fixed equipment through centering certain special activities in special rooms. This is offset to a certain extent by the new equipment required in rooms used by double groups; but when increase in building enrolment is considered, it will be found that the cost of new equipment will probably not increase the per capita equipment-cost for the building.

6. *Better instruction.*—The plan has not been in use long enough to speak with complete certainty regarding the relative value of instruction in the regular subjects nor has there been the chance to apply scientific tests "before and after taking." But so far as the observation of principals and supervisors goes, the regular work is fully up to that previously secured. The response to such tests as have been applied is thoroughly encouraging. In the special subjects there can be no doubt that a clear advantage has been secured. The value of the work in physical training alone is, in my personal judgment, a valid argument for the plan. The gymnasium or playground work is well graded and is given under trained supervision with men teachers for the boys from the fifth grade up. Physiology and hygiene have been transferred to the physical-training department, with good results. The progress of classes under special teachers in art and in literature has been one of the motives influencing principals of buildings to request the installation of the plan.

7. *Use of space.*—This has already been discussed in speaking of the general features of the plan. A certain amount of classroom

space is saved: this varies as conditions of enrolment and division of space vary. Further, the space now provided in many buildings for auxiliary activities of the school are more fully utilized.

LIMITATIONS

1. The first requisite in planning an arrangement of this sort is to have some place for each group each hour. As the connection of school work with outside activities increases, there is likely to be further saving of space along this line, but at present the plan calls for a teacher and some place for each group. Let us suppose that each grade from the second to the sixth has two divisions. Five of those will be in the regular classrooms. There must be at least four other places. The fifth is provided through a doubling of the groups in physical training, but this will usually still require five special teachers; hence it will follow that the main requisite in arranging a building on this plan is either to have or to secure one or more gymnasiums or playrooms. A regular classroom can be given to this use, if necessary, without loss of space, but even if the building has no gymnasium, there is usually cheaper room that can be used. But the best results are secured if a room larger than the ordinary classroom is provided, since economy in other ways results from combining playground groups.

2. The "study period" which was begun has not been altogether satisfactory. This however, can be largely overcome by developing work in nature-study or penmanship. Another way that has interesting possibilities is to combine the art and manual-training courses for the lower grades as is now frequently done, give them double time, and work out a new content of courses along the line of applied art.

3. Several of our buildings have seventh and eighth grades or seventh, eighth, and ninth grades in departmental schools above these elementary groups. The tendency is to have one set of special teachers (in art, music, manual training, and physical training) do the entire work in a given building; we have not found this working so well as to make separate arrangements for, say, two departmental schools and two grade schools. Both ways have been tried. Apparently the latter plan gives certain advantages in

teaching, since instructors who deal with the upper grades (grammar) are not always equally successful with the primary grades. It also unifies the organization, makes easier the arrangement of hours, and is likely to make a fractional saving in the teaching time.

4. An essential to be met at once is the securing, through an equipment of lockers or boxes, a definite storage place for the books and utensils belonging to each pupil. Their provision is neither so expensive a matter nor so troublesome as might at first be considered.

The proper aim of any plan is to secure improved work under improved conditions. A common tendency is to attempt to work the plan somewhat regardless of conditions. The advantages we have spoken of are the results fairly to be expected if the plan is undertaken with reasonable co-operation of all concerned. In one point the demand on teachers may be heavier than under the old method. Co-ordination of regular and special work is just as valuable as ever. Under the old plan the teacher is responsible for the progress of pupils in each subject. Under the new plan the regular teacher is freed from that responsibility. The necessity of co-operation among regular and special teachers to keep up connecting threads of interest between the different lines of work still exists. The success or failure of the plan will finally, I think, depend on the degree of co-operation and mutual interest secured from both supervisors and teachers who are carrying out the prescribed work of the course of study. While supervision and requirement in special lines have been transferred from the general to the special teachers, the professional demand for interest in the individual pupil and intelligent oversight of his work must continue. It is an incitement to the highest professional interest of teachers. Mediocre teaching, lack of interest, and narrow adherence to one's own line of responsibility could result in an isolation of each department of work and would be a serious drawback. I am glad to say that the teachers have shown that this somewhat narrow attitude need not be in evidence.

COST OF THE SYSTEM

The discussion of space and teaching requirements has already shown that grade work can be carried on by this method in build-

ing units of fair size with an economy in space, with possible economies in teaching force, and certainly without increase in the latter. The exact arrangement of teaching force naturally varies, from year to year in a given building, with a variation of the enrolment in the different grades. As is already shown, primary teachers may sometimes carry parts of three different half-grades in one room. The upper-grade teachers cannot swing the program for more than two. The primary grades can generally be so arranged that the rooms are used to their maximum capacity, and grammar grades very frequently cannot. Thus it often happens that buildings require more teachers one year than another with practically no change in total enrolment simply because of different distribution of enrolment. This fact and the steady upward trend of teachers' salaries within the last few years make an accurate comparison of teaching cost quite difficult unless we gather data for a term of years. Teaching cost, too, will vary in different places. This much is clearly evident—that at least two special lines of work are added to the curriculum without adding to the number of teachers required. Certain buildings have been arranged with an actual saving in the number of teachers. One or two have started this plan with a slight increase in the teaching requirement. We have tried under the old and the new methods gradually to reduce the number of pupils per teacher in the lower grades. Hence the total cost will not show much reduction either as regards the number of teachers or when we test it by per capita cost. Computing the room saved at a very conservative estimate, we have a reduction in the demands for additional room and hence for additional investment in the last few years of from $25,000 to $50,000; and we have the additional lines of work already mentioned secured at no greater increase in teaching cost than would have been required through the other factors which affect the situation, such as increase in teachers' salary rate. There is possibly a slight exception to this in the fact that physical-training teachers at present have a little higher salary rate than the teachers whom they have replaced. This is, however, a very small item and is more than offset by further economy in cost that comes from the reduction of overhead through lessening of the time assigned to supervision.

SUMMARY

1. In the Kalamazoo schools the former arrangement of school grades has in practice been modified by the introduction of departmental work in the customary sense of that term above Grade VI, and progress is being made toward a definite division between senior and junior high schools.

2. Kindergartens and special schools have been developed to meet the needs of several of the special groups now claiming a specialized educational attention and procedure.

3. The first six grades are grouped as an elementary school. The first-grade course and method are quite akin to the work of the kindergarten. Beginning with the second grade a modified plan of departmental work was undertaken experimentally in one building in February, 1911, and has now been extended practically throughout the grade schools. The essential points of the plan are: (*a*) Each regular teacher looks after the work of two regular rooms or groups. (*b*) The special work for both these groups is done under special teachers. Work with regular and special teachers alternates under the definite time schedule that has been outlined. (*c*) Arrangement of space and equipment must be so carried out in detail as to provide in the regular rooms (or wardrobes) suitable storage places for two sets of books and to furnish also, adequate and well-arranged rooms for the special subjects. With us, the planning of special subjects and space has centered around physical training.

ADVANTAGES

1. *Numbers.*—A given building can take care of an increased enrolment. A given number of teachers can usually take care of an increased enrolment, but the tendency of best administration is a reduction of the present maximum unit, at least in the lower grades.

2. The daily time schedule is more definitely used by both teachers and pupils, with increased interest in work.

3. Supervision is reduced.

4. Supplies, especially those for the special subjects, are somewhat reduced through concentration of work in a few rooms.

5. There is also some saving in equipment and apparatus.

6. Better instruction is secured. The weight of testimony goes to show that this is a fact in regular work. In the special subjects in which results are more quickly tested, this is already clearly proved.

LIMITATIONS

1. It is necessary for some specific place to be provided for each division during the day's schedule. In a sense, the gymnasium or playground becomes the center of the plan. Hence any effort to undertake the plan without gymnasium facilities would be unwise.

2. "Study periods" are not so satisfactory as having each period for the groups outside the regular rooms occupied with specific work in some one special line.

3. If this plan is undertaken in the lower grades, departmental work in the upper grades is usually secured with less confusion by having separate teachers for the special subjects in the two arrangements. This can be gained by having the departmental special teachers carry work in two or three buildings. If the plan is carried through the eight grades with one set of special teachers, there is probably a little further saving in arrangement both of rooms and of teachers.

4. Care must be taken to provide beforehand the needed equipment, which is moderate in amount.

5. Through supervision and co-operation of departments the tendency to crystallize on separate lines should be watched and overcome.

THE COST

The conditions in cost will depend very largely on the local conditions as to teachers' salaries and in the arrangement of grades. An average of much more than eighty pupils to the double group is undesirable, but when the general building average for single rooms is below 40 or 42 there is a saving of from 20 per cent to 30 per cent in room space—hence that saving in unit cost of classrooms needed to accommodate enrolment. The effort has been not so much to save on actual cost in running expense as to distribute this cost for better returns.

THE ERROL CONSOLIDATED RURAL SCHOOL

S. HORACE WILLIAMS
Superintendent of Schools, Colebrook, New Hampshire

The Errol Consolidated Rural School is situated in the extreme northeastern part of New Hampshire. Access to the school is difficult, since one must pass through Dixville Notch on the west and travel over twenty-one miles of road to reach Colebrook and the nearest railroad. Thirty miles to the south is the city of Berlin, with its railroad and paper mills. Postal service is conducted between Berlin and Errol by stage. During the long winters Errol is well-nigh inaccessible because of bad roads and the Notch, which is rendered almost impassable by snow drifts; but from June until November many tourists pass through the village.

The sparse population of Errol is distributed along one trunk road. The village, consisting of some twenty homes, a hotel, two garages, two stores, one church, and the school, is located at the junction of two streams, which just south of the village become the Androscoggin River. Agriculture and lumbering are the chief occupations of this rural population. The taxable polls number about 107. Errol has no resident physician, minister, undertaker, dentist, plumber, or barber. The people are well-nigh self-sustaining, homogeneous, and intermarried. Although geographically isolated, intellectually the people come into touch with the outside world by means of local and long-distance telephones, automobiles, and the press. Three organizations—the Knights of Pythias, the Grange, and the school—bring the people together at frequent intervals for the interchange of ideas, but the greatest of these is the Consolidated School.

In New Hampshire two or more towns or special districts may, by vote of each, form a district for the purpose of employing a superintendent of public schools, each town or district paying a just share of his salary, one-half of the stipulated salary being paid by the state. About five years ago Errol joined the Colebrook Town and the Colebrook Special Districts to form such a union

and employ a superintendent of schools who should devote his entire time to supervisory duties. At that time Errol had three typical one-room rural schools, with from twelve to fifteen scholars each, located one at each extremity of the town and one in the center. Consolidation was not realized without a bitter controversy; for almost one-half of the citizens held tenaciously to the idea that "the little red schoolhouse" was a most efficient institution, and for several years after 1910 the annual school meeting was the occasion of a severe struggle between the two hostile camps, the one standing for the old order in education, the other for the new. Since consolidation, however, Errol has never gone back to the one-room system and today the school has more friends than ever. At the annual school meeting in March, 1915, in less than ten minutes the citizens voted over $4,000.00 to support the central school without one hostile vote, and the meeting became a social gathering where co-operation and good-will prevailed.

Consolidation being decided upon, the central school building was raised and completely remodeled at a cost of $2,000.00. A furnace and modern toilets were installed in the basement, while drinking fountains, supplying spring water from the adjacent hills, were placed on the first and second floors; slate blackboards and an adequate number of windows were added. On the first floor one finds a large, cheerful room for the first three grades, and a spacious entrance hall. A recitation room, used also for the practical arts, the assembly room, and closets for supplies are located on the second floor. The building is rectangular in shape, and thoroughly sanitary in appointment, but it has already proved to be too small a building for the growing school.

A NEW TYPE OF SCHOOL

One-half of the children are transported in school wagons to this central school, the greatest distance being four miles. Under the old system, school held thirty weeks during the year; under the new, school is in session for thirty-four weeks each year. Tardiness has been reduced to a minimum, while the percentage of attendance has been raised to 95. Each driver of a school wagon receives $2.50 per day, making the total cost for transportation for the two drivers

$850.00 per school year. The sum of $150.00 is voted annually for supplies; $800.00 to support the high school; $2,500.00 for the elementary school; and $100.00 for the tuition fees of Errol children who are taking their third and fourth years' work in other high schools. The school costs from $3,500.00 to $4,000.00 a year and because of the small enrolment, which is from forty to forty-five pupils, the per capita cost of the school is heavy. But the citizens of Errol demand a graded school, even though the various grades are small. This necessitates the employment of four trained teachers, especially on account of the varied practical arts curriculum. Three of the present teachers are graduates of the Plymouth State Normal, one having taken graduate work last summer and another having spent one summer at Teachers College, Columbia. The fourth teacher has had normal training, several years of experience, and a state certificate. It is exceedingly difficult to procure trained teachers for such an isolated school; and even after finding the teachers the problem of securing congenial boarding places is acute. At present the personnel of the teaching force is far above the average. These young women have not only a good education, but high ideals and a love of country life. By rooming together, two in each group, they have been able to get accommodations, and for the first time in this school we find all four teachers happy and contented—a condition which we regard as a prerequisite for efficient work.

The salaries of rural teachers in New Hampshire are low, especially in the northern part of the state. Yet teachers' expenses are much lower than in other parts of the country where the salaries are high. Good board and room, if procured at all, can be secured for $4.00 a week. The salaries are as follows:

The principal	$16.00	a week
Assistant in high school	13.50	"
Teacher of fourth, fifth, and sixth grades	12.50	"
Primary teacher	12.50	"
Superintendent	15.00	" (40 weeks)
	(one-half paid by state)	

The equipment of the school is splendid, especially along the line of modern textbooks and supplementary reading. A great

deal of good reading-material is furnished and history classes are taught to use the best periodicals for reference work. In the manual arts equipment we find three Sheldon benches, each having two rapid-acting vises, steel bar clamps, hand-screws, a Stanley miter-box, a foot-power tool grinder, and the best hand tools obtainable. For the courses in household arts the girls have a new White sewing machine, running water, a porcelain-enamel sink, a three-flame oil stove, and an adequate kitchen equipment. Science apparatus is being added as needed. The students taking manual training construct the shelves, racks, and other equipment needed by the school. At present they are working on a large and substantial science table. The School Improvement League has recently purchased a piano, but this somewhat heavy undertaking was rendered possible by the hearty co-operation of the more progressive women of the town. Although music does not appear in the regular program of studies, not only music but also drawing receives some attention by the present force of teachers.

The work of the high school begins with the seventh grade and continues for four years. Upon the completion of this work, we find that some children are anxious to go farther and plan a normal course or four years at college, while others return to the farm. The transition from the work of the grades to that of the high school is gradual, the students receiving no severe shock in passing from one type of work to the other. Inasmuch as the teachers often alternate their work, the children become accustomed to the methods and personalities of the entire teaching force. The teachers direct and organize the play activities, enjoying the intermissions with the children no less than they. When school is in session, this institution approaches Dr. Dewey's ideal of a co-operative society working happily toward educative ends. One seldom finds so many different types of educational activity going on at one time as he does on the second floor of the Errol Consolidated school.

THE CURRICULUM

The curriculum reflects in a striking manner the activities of the community. The people devote most of their time to agriculture and lumbering, and exhibit considerable ingenuity in

mechanical ability. The school aims to prepare rural children for a richer life in their environment and to give each child as far as possible his heritage in science, literature, and government. The dominant features, then, of the course are as follows:

1. Emphasis upon the practical arts, devoting as much time and attention to toolwork for the boys and to cooking and sewing for the girls as is given any other subject.

2. A great deal of attention to nature-study and elementary science as related to agriculture and forestry.

3. A course in constitutional history in the tenth year, with special reference to the struggle for democratic government and to the active participation in local town affairs.

4. The study of masterpieces in literature, chiefly to inculcate an appreciation for and love of good literature.

5. An effort to relate mathematics as given in arithmetic and bookkeeping to the life of the village and the farm, and also to teach enough algebra to enable all those children to go higher who show ambition to do so. The work below seventh grade is very similar to that of any well-graded school, but the spirit of, and the approach to, the work are well expressed in the following words of the teacher of Grades IV–VI, with regard to the study of denominate numbers:

> The plan of the farm was worked out, involving square measure. We discussed the seed planting and average crop expected, involving dry measure. When estimating the harvest it was necessary to consider the herds and the length of time they were fed in the barn. It was also important to consider help on the farm, thus bringing in time measure. As every farm should contain woodland, so we had ours; we cut and sold wood from the same, thereby using cubic measure. Poultry, sheep, beef, and hogs were killed and vegetables sold, thus employing the table of weights and measures. Supplies were bought for the house and milk sold, using liquid measure. An account of the work was kept, introducing elementary ideas in farm accounts.

THE CURRICULUM OF THE HIGH SCHOOL

Seventh Year	Per Week		Per Week
English	4	Cooking and sewing (girls)	4
Geography	4	Spelling	5
United States History	4	Eighth Year	
Manual training	4	English	4
Agronomy (boys)	4	Geography	4

EIGHTH YEAR—*Cont.*	Per Week
United States History	4
Manual training	4
Animal husbandry, dairying (boys)	4
Cooking and sewing (girls)	4
Farm and household arithmetic	4
Spelling	5
NINTH YEAR	
English	5
Bookkeeping—	
a) General and farm	5
b) Household	5
Elementary science	5
Practical mathematics	5
Horticulture (boys)	5
Household sanitation and mechanics (girls)	5
TENTH YEAR	
English	5
Elementary science	5
Advanced physiology and hygiene, nursing (girls)	5
Practical mathematics (boys)	5
Constitutional history of the United States	5

THE PRACTICAL ARTS

The work in the practical arts—sewing, cooking, and bench-work—deals with fundamental principles and lays stress on projects which relate to domestic use, in the home and on the farm. Shopwork has progressed along three lines, viz.: repair of doors and windows in the schoolhouse; the construction of fixtures and models for school use (as shelves and a large sand-table); and making models for home use. Work thus far has been in wood, but a plan is under way to teach concrete construction. The boys have made a cold frame and tree-protectors, book-racks and tabourets, and models for home use, according to individual choice. About $1\frac{1}{4}$ hours a day are devoted to work of this kind.

The work in household arts is comprehensive, comprising hand and machine sewing, begun in the seventh grade; practical cookery; invalid cookery and elements of nursing; a study of household accounts and appliances and sanitation. The idea in sewing is to make a garment or article of use; hence, instead of spending time on learning stitches as such, the girls make dishcloths, towels, pillow shams, sheets, and aprons. A great deal of the work in cookery is given over to the preparation of hot lunches for those children who come from the country. Here cooking has the best kind of motivation, that of satisfying hunger, and sufficient quantity of food is prepared to serve some twenty-five pupils. Vegetables are often furnished by the parents. It often happens that the instructor requests each child to bring a potato, turnip, or apple.

DAILY PROGRAM OF HIGH SCHOOL

Time	Monday	Tuesday	Wednesday	Thursday	Friday
9:00– 9:05 9:05– 9:15	Basement Opening exercises	Basement Opening exercises	Basement Opening exercises	Basement Opening exercises	Basement Opening exercises
9:15– 9:40	Practical Mathematics 9 Agromony 7	Practical Mathematics 9 Agromony 7	Practical Mathematics 9 Study	Practical Mathematics 9 Agromony 7	Practical Mathematics 9 Agromony 7
9:40–10:05	Elementary Science 9, 10 Study Study	Elementary Science 9, 10 Arithmetic 8 Arithmetic 7	Elementary Science 9, 10 Arithmetic 8 Arithmetic 7	Elementary Science 9, 10 Arithmetic 8 Arithmetic 7	Elementary Science 9, 10 Arithmetic 8 Arithmetic 7
10:05–10:25	Algebra 10 Geography 7, 8	Algebra 10 Study	Algebra 10 Geography 7, 8	Algebra 10 Geography 7, 8	Algebra 10 Geography 7, 8
10:25–10:30	Basement Recess	Basement Recess	Basement Recess	Basement Recess	Basement Recess
10:45–11:05	Civil Government 10 Spelling 7, 8	Civil Government 10 Spelling 7, 8	Civil Government 10 Spelling 7, 8	Civil Government 10 Spelling 7, 8	Civil Government 10 Spelling 7, 8
11:05–11:30	Bookkeeping 9 Study	Bookkeeping 9 Cooking 7, 8	Bookkeeping 9 Cooking 7, 8	Bookkeeping 9 Cooking 7, 8	Bookkeeping 9 Cooking 7, 8
11:30–11:55	Music	English 10 Cooking 7, 8	English 10 Cooking 7, 8	English 10 Cooking 7, 8	English 10 Cooking 7, 8
11:55–12:00 12:00– 1:00 1:00– 1:05	Basement Noon Basement	Basement Noon Basement	Basement Noon Basement	Basement Noon Basement	Basement Noon Basement
1:05– 1:25	United States History 7	Music	United States History 7	United States History 7	United States History 7
1:25– 1:45	Horticulture 9 or Forestry English 7, 8	Horticulture 9 or Forestry English 7, 8	Horticulture 9 or Forestry Study	Horticulture 9 or Forestry English 7, 8	Horticulture 9 or Forestry English 7, 8
1:45– 2:05	Manual Training 7, 9, 10 English 10	Manual Training 7, 9, 10 History 8	Manual Training 7, 9, 10 History 8	Study History 8	Manual Training 7, 9, 10 History 8
2:05– 2:25	Manual Training 7, 9, 10 Drawing (girls) 7, 8, 9, 10	Manual Training 7, 9, 10 Drawing (girls) 7, 8, 9, 10	Manual Training 7, 9, 10 Drawing (girls) 7, 8, 9, 10	Music	Manual Training 7, 9, 10 Study
2:25– 2:30 2:30– 2:45	Basement Recess	Basement Recess	Basement Recess	Basement Recess	Basement Recess
2:45– 3:15	Advanced Physiology 9, 10 Study	Advanced Physiology 9, 10 Penmanship 7, 8	Advanced Physiology 9, 10 Drawing (boys) 7, 9, 10	Advanced Physiology 9, 10 Drawing (boys) 7, 9, 10	Advanced Physiology 9, 10 Physiology and Hygiene 7, 8
3:15– 3:45	English 9 Sewing 7, 8	English 9 Sewing 7, 8	English 9 Sewing 7, 8	English 9 Sewing 7, 8	Special Program

In the fall attention centers around the problem of canning and preserving, the homes again supplying the fruits, and in the spring the class in agriculture provides fresh vegetables. The class in cookery meets four times a week for laboratory work and once a week for the discussion of principles. A few parents revolt against the introduction of such practical work into the school, but we find that the children from these homes cannot thread a needle or prepare the simplest meal. The science-teacher has charge of these courses, while the superintendent directs the toolwork.

Handicapped at the outset by the lack of a school farm of good proportions, the courses in science and agriculture and related subjects are nevertheless made as vital and practical as possible. For the present, courses in animal husbandry and horticulture are merged into two courses, the first being a course in general elementary science, and the second dealing with agricultural science. Considerable attention is given to agronomy; to farm friends and foes in the way of insect life; to a detailed study of forestry, which is rendered vital because of the amount of lumbering carried on in this region. A number of experiments in biology and chemistry are made and observations recorded, which, together with the variety of science-reading required, stimulate the minds of the children and train them in the observation of natural phenomena.

A state law of New Hampshire requires that the constitutional history of the United States be taught in the Senior year. This course deals with local town government; the election and duties of selectmen; a discussion of town administration; the state and federal constitutions with reference to their development and particular emphasis upon the struggle for the civic rights of citizens. In Errol the annual town meeting is held in the forenoon of a Tuesday in March, and the school meeting in the afternoon. This is the big day of the year, men, women, and children attending, many remaining at the town hall to enjoy the dinner prepared by the women. At these meetings the children are introduced to the machinery of town government; at school they get the historical setting of the same. At the annual meetings, in a few minutes thousands of dollars are raised for improvement of roads, support of schools, and general upkeep of the town; in the school, teacher

and children discuss the value of good roads, the modern school, and civic improvement.

In the study of literature those classics are read which the College Entrance Board has recommended for admission to college. Four or five masterpieces are studied in class and the same number reported upon as supplementary reading. As a rule, a classic is read twice—the first time hurriedly, to learn the story and plot; in the second reading a more intensive study is made in order to acquire the author's message and to note his style and beauty of diction. The aim is always to stop short of that point in minute analysis where the children begin to revolt against the study of good literature. We want to create a love of good reading by the reading of classics in an enjoyable manner.

In the high-school mathematics of the ninth and tenth grades time is given to a review of arithmetic; to bookkeeping based on original work and later on a standard text; to farm mathematics (accounts and arithmetic directly relating to farm pursuits); and to algebra if any of the children desire such work as a preparation for the Junior work of the secondary school. A constant effort is made to relate mathematics to the life of the children, and with this object in view considerable original work is done, one child keeping the accounts of his hotel business, another of his farm, and another of his specialized pursuit—poultry business, etc. At present it is necessary to limit practical work in agriculture to experimental work on a small scale at the school, and to the assignment of project work to the boys who live on farms. In the near future we hope to acquire an acre of land near the school for experimental work on a larger scale.

In order to realize a finer school spirit and to bind the children together in a common purpose, the School Improvement League was organized. The management of this League gives the children parliamentary drill and thereby a degree of ability in public speaking and brings out latent ability in leadership. Parents unite with the teachers and children in a co-operative effort to raise funds for a musical instrument or a school library. Entertainments consisting of recitations, dramatizations, readings, and folk-dances are given by the children, being generously patronized by the parents.

The absence of serious problems in discipline is one of the most striking and commendable features of the school. The children of Errol have no moving pictures to attend; none of the manifold and often evil diversions of the village and city streets to distract them; and the majority, being transported in the "school barge," enjoy the ride with an abundance of innocent fun, and upon arriving at school exhibit a willingness and spirit for school work quite uncommon among children of their age. In this school, therefore, discipline is reduced to a minimum. Within the last two years the general conduct of the children on the school grounds and within the building at noon and recess periods has improved in a remarkable manner. The larger boys are quite noisy but kind-hearted and will respectfully listen to the advice of school officials. The teachers are now working on a plan to organize plays and games, for these rural children have little conception of organized play or competitive games.

THE SIGNIFICANCE OF THE SCHOOL

This discussion of the Errol Consolidated School has not been submitted with the idea that other rural districts should organize their schools according to this plan, for many conditions exist at Errol which are peculiar to that locality. We feel that this school in certain respects might well be a type of school appropriately adapted to the needs of rural life in New Hampshire. This school is one of the first of its type to inaugurate a new era in rural education for New Hampshire. While village and city schools have advanced in efficiency by leaps and bounds within the last twenty-five years, our rural schools have not held their own, even deteriorating and receding from an alleged passable condition which prevailed a generation ago. The subject-matter taught in this old type of school, and still generally common in all parts of this country, relates to the life of rural children only in a most superficial and visionary manner. The unsanitary conditions, poor teachers, dilapidated buildings, and low ideals on the part of teachers and children, all contributed to make the typical rural school an unattractive place, and consequently to drive the children from life

in the country and agricultural pursuits. The Errol school aims to enrich the lives of rural children, making of them potential citizens of high ideals and lovers of country life who will be able to establish their work upon a scientific basis. And those who leave the country will later discover that their course has given them a practical and comprehensive foundation for constructive work in a larger field, for today the world demands men and women who can reveal to the world the potency of their thinking by action.

THE CURRICULUM AND VOCATIONAL GUIDANCE

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Organized direction and guidance with respect to the vocations of life is of very recent development. It is true that fathers and mothers almost from the beginning of history have endeavored in a crude way to have their sons well started in life. Benjamin Franklin's father went with him to various shops in order that he might see the work and "discover the bent of his inclinations." Fortune-tellers and clairvoyants, phrenologists and physiognomists, were the random answers to a need long felt. This need becomes all the more acute when there are apparent failures in every walk in life, when with plenty of work in the world there are idle men everywhere. It was Frank Parsons who made the first systematic attempts to help people to find the right place in life. His method was to get the subject, in answer to printed questions, to give in writing as complete an account of himself as possible; then by personal conversation help him to understand his limits and possibilities. To some, "vocational guidance" means just such introspection and council; to others it means helping persons to find and locate in the right job; to still others it means giving information about vocations and a try-out in various ones. To aid in all of this, psychologists have worked on tests of mental ability, tests for vocation types, and tests for specific actions. Information about vocations has been printed and compiled and a new subject—vocational guidance—is knocking at the doors of the school curriculum.

The discussion in this paper is limited to the question of what the curriculum has to do with vocational guidance. The term "curriculum" is here taken to mean the material of knowledge and social practice organized into a form suitable for educational purposes. Vocational guidance is the effort to place before the individual such experiences as will change his character and cause

him through his own inner growth to develop a consciousness of his own abilities and place in the work of the world. Vocations are the occupations by which man gains a livelihood.

An aristocracy sets men off into groups such that the individuals of one group do not intermingle freely with those of another. It may be on account of inherited privileges, it may be because of specially acquired privileges, or it may be a social prejudice. It is evident at a glance that knowledge of vocations will not cause class differences of the first kind to arise, but it may be that to know how another lives and works will set up feelings that will prevent association. Thus, to learn of the work of a maker of matches—the place he works in, the disease he is subject to—may set up a barrier between us that will cause me to object to his having some of the rights that I enjoy. On the other hand, such a knowledge operates to arouse sympathy and a desire to alleviate such a condition while warning us of a situation where an individual is hampered and fettered. If vocational insight becomes a part of the curriculum, then it becomes a property common to all, and common knowledge is a means of removing class barriers. To say that young people who do not care for academic study should be placed in vocational schools by themselves is an arbitrary method of using guidance to set up barriers between people by compelling them to live and work in separate social groups. Moreover, an individual is set thereby within definite limits, and already in many towns the finger of scorn is pointed at vocational-school boys. Vocational guidance in every public-school curriculum gives an equal opportunity for every boy and girl to gain some idea of the vocations of men and women. Democracy requires a wide spread of such knowledge.

The more chance one has to learn of different occupations the greater chance he has of being able to develop his own individuality. Misfits are due to a lack of this opportunity for wide knowledge and experience. One man may fail as a bookkeeper and make good as a clerk; one may be a good farmer but a poor lawyer. All such misfits mean loss of time in getting located, failures when right locations are not made, and loss of efficiency all around. Democracy stands for the equal chance of every individual to develop

to the extent of his ability, and if the material and practice of vocational guidance helps to do this it is to that extent democratic in character.

Men are found idle when there is work in the world to do; men shift from one occupation to another; there are strikes, lockouts, and contentions in the work in which men are engaged. All such conditions indicate that a satisfactory relationship between the individual and society has not yet been reached. Such an adjustment requires a long time, and while some progress is made through influencing the adult, the most lasting changes may be produced through education of a younger generation. Misfits are the result of ignorance; therefore if to individuals there can be brought a knowledge of the needs of vocations and a knowledge of their own abilities in relation thereto, some progress may be expected. The vocational counselor and the bureau will do what they can for the grown-ups in trying to remedy a diseased condition, but the curriculum of the public school is the most potent agency looking toward prevention, because the public school, in touching the lives of practically everyone at a plastic stage, is a means of giving such a knowledge a wide distribution.

The material which the curriculum may present is concerned with the nature of occupations, the conditions under which they are carried on, the hours of labor and the remuneration, the chances for employment and the chances for advancement, together with suggestions relative to individual ability. Because these questions must be asked by everyone and because they are problems social life constantly meets, their place in the curriculum is socially justified. Furthermore, society is made better to the degree in which its members are better; hence it becomes vitally concerned in the efficient distribution of its members. When there are more stenographers than positions in a locality, fewer teachers than places to teach, fewer farm hands than can take care of the crops, while there are more carpenters in town than can get jobs, or when a machine hand could do better as a painter or a clerk as a dressmaker, then there is an inefficient distribution of the members of society. An efficient distribution can be obtained only when vocational knowledge and insight are widely distributed. It is

a part of man's social inheritance that he should be engaged in work—a work that will be the means of earning a living. And whatever means will bring an appreciation of the conditions of this inheritance to the greatest number, together with the greatest freedom of association, will be democratic and social.

Social groups depend on "consciousness of kind," and this is brought about when individuals share one another's activities. If, then, into the curriculum there can be introduced a body of information and practice such that many individuals share in it, it must result in greater social solidarity by extending individual sympathy to wider fields.

Selfishness is easily the root of many evils. It is the motive power in the pushing at the box-office, in the rushes to get on street cars; it puts men of small caliber in positions they cannot handle; it demands a living from the world regardless of service rendered. Such indications show that individuals do not seek the good of the whole social group in a conscious way. Yet a society composed of individuals willing to sacrifice for the good of the whole has the surest guaranty for the individual development of its members. Giving all members of the society an idea of the vocations of men will help them to see the relations of one occupation to another. And as they realize the needs of those occupations and grow to a consciousness of their own abilities and of what society expects, there will be a greater reason for them to help in filling the places of greatest responsibility with the strongest men. To have come into a vocation after deliberate knowledge and choice tends toward satisfaction and permanency and the feeling of doing a share of the world's work. Agitators will have difficulty, therefore, in calling such persons out for strikes, and the wandering contingent of society will become less.

Some may argue that the curriculum is already full to overflowing and there is no time for another thing. This is arguing on the basis that the material in the curriculum has a firm and inalienable right to be there—in fact, that it has a "divine right." It does not take into account a changing type of society. If individuals develop and society continually reaches on to heights not reached before, then the curriculum must be a developing

thing; the sanction of its being is in the social life. We marvel that the curriculum has been shaped for the 4 per cent or 5 per cent who are to go to college while the balance must shift for themselves. Why give time to Latin, Greek, or algebra if in the end ignorance of childish ailments causes the loss of a little life? What does it profit to know the least common multiple, the binomial theorem, or abstract grammatical rules if in the end the would-be worker is drawn into a position with no outlet or wastes years in wandering from place to place with no definite aim? A curriculum based on social life always has time for socially valuable things. As suggested, the curriculum may make a place for vocational guidance by displacing material whose value relatively is much lower. Why should not the subject-matter of vocational guidance as formulated in such topics as "Things Boys and Girls Have Done That Are Worth While," "Blind-Alley Occupations," "My Natural Ability," "Millinery," or "Farming" be as suggestive and profitable as themes in English such as "A May Morning," "Queen Elizabeth's Character," or "Macbeth's Motives"? Certainly they are more closely connected with the experiences of the boys and girls and open to them phases of the real social life around them. Some practice at the real work of a tinsmith in making a sheet-metal box or soldering a leaky pan will bring the real problems of a vocation close to a boy and he has some basis on which to decide whether he will be a tinsmith or not. Because vocational guidance furnishes real life-problems of high value it has a right to take some of the time of the curriculum.

At first thought one might say that the proper time for vocational guidance to appear is when a person is ready to go to work. But time is short then and one is likely to follow impulses rather than good judgment. At such a time the pull of a job with a high initial wage is very great and especially is it so with pupils who leave school from the elementary- or high-school departments. Children who go through the high school are a highly selected group and those who go to college are even highly selected. Under present conditions the future of even more high-school pupils is somewhat definitely marked out, but as the school gets more and more away from the old, narrow, classical lines the pupils will need more

and more guidance. The great mass of children who leave school in the elementary-school period are the ones most sorely tempted by "blind-alley" jobs, and nothing has been done to furnish them with a resisting background of vocational information. Vocational guidance, then, must be started low down in the grades. Not that we shall say to the little second- or third-grader or to his parents, "You will make a fine mason," or "You will be a banker," but rather, through the suggestive subject-matter of industrial arts, he will come to have an insight into the industrial life of the community and country in which he lives. Wide-awake kindergartners are furnishing the foundations for this in the little plays of "Cobbler," "Farmer," "Miller," etc.; first grades, when they work out "What Mother Does"; second or third grades, when they construct a village street on their sand table and line it with miniature shops and stores; and other grades continue the plan when they take up problems concerned with food, clothing, shelter, utensils, records, tools, and machines. Such material is not beyond the comprehension of elementary-school pupils. Daily they are in contact with the home, the village (or city street), and the six elemental physical needs of man. It needs only the opportunity to place themselves in the place of the workers of the world to appreciate something of what their work means. Elementary-school children cannot go out and work in the carpenter's place, but they can go where he is at work, see him put up joists, put up rafters, set window frames, and lay floors; they may handle his tools and at school build a house for themselves. It is not argued that they will know whether or not they wish to become carpenters, but it is contended that they will have some knowledge of what the carpenter's work is like and some appreciation of what it means to build a house. Even such equipment is better than no equipment when it comes time to make a definite choice.

Investigations show that it is not economic pressure that is chiefly responsible for children leaving school; it is the feeling on the part of the pupils and parents that they are getting nothing that really counts. Live material of social value and interest will save many pupils to the school.

A differentiation of boys' work from girls' work begins with the intermediate period (junior high school), say the seventh, eighth, and ninth grades. The pupils in these grades are coming into the period when individual independence begins to assert itself. They become more closely identified with the working world through efforts of their own to work and earn. It is a period of wanting "to find out." If the great work of woman is to be the *homemaker* of the race, then the girl's work will be directed primarily toward giving her an insight into homemaking occupations. It is necessary, however, to consider the fact that from the time she leaves school until she becomes a homemaker it may be necessary for her to be self-supporting. Possibly she may never become a homemaker in the true sense; therefore the insight into homemaking must be supplemented by insight into suitable occupations for women. A motive for starting on such a line will be furnished when a girl expresses a desire to work in a certain occupation. The girls may visit a place where such an occupation is carried on; they may study the conditions under which the work is done, consider health, hours, pay, chances for advancement; and even secure a chance to work for a time to try it out. An opportunity to "try out" will be all the more valuable if carried out under actual conditions rather than school conditions. For the purposes of insight, however, the school can set up conditions that are very real in many occupations that are open to girls. In the case of printing, bookbinding, jewelry work, office work, and the like, both boys and girls may work with the same equipment.

If girls are to be homemakers, boys are to be the *home providers*, and as such their range of occupations must be far wider than the girls'. The old manual training, with its "hand, eye, and mind" training, does not go far in showing a boy the conditions under which a carpenter works, nor does it let him very far into the nature of the railroad engineer's job. The starting-point is the boy's own curiosity about an occupation. Then, letting him see with his own eyes the nature of the work, having him find out from the library and from people the opportunity it has to offer, and giving him an opportunity to experience some of the operations involved,

should give him a fair basis for determining whether or not he would be happy in that vocation. To furnish such opportunities *after* he has left school and has started work is like applying a remedy to the sick; giving him a consciousness of vocations in his schooldays is providing prevention. Moreover, employers do not want boys in the trades before they are sixteen, so that it would appear that to be a preventive such work must be introduced before the end of the intermediate or junior high-school period.

If the information and experience gained in the intermediate period, supplemented by the earlier industrial insight, lead to a definite choice, it may be in two directions: first, choice of professional types of work; secondly, industrial or trade types of work. In the latter case the boy will at once, in the secondary school, enter on definite courses of vocational training, while in the former case he will enter courses leading to a professional school. In this department his ideas may be still further directed to the various professions, their comparative values, and the opportunities they offer.

Can such material introduced into the curriculum have educational value? If so, it should be useful material in "directing experience to the modification of character that a richer experience may ensue." Man's most fundamental wants and interests are concerned with his efforts to make a living, and therefore a consciousness of vocations is valuable because concerned with this basis of value. This vocational-insight material is not the end sought, it is not satisfying in itself, but it contributes to an end—that of producing new points of view for boys and girls so that the lives they live will be as rich and full as their abilities will permit. In this sense, as with all other educational values, this material is of the secondary type. The value of vocational-guidance material expresses itself in increasing the interest of boys and girls in the work of the world by giving them, by means of the "exposure" to which they are subjected, a greater appreciation. To be with workers, to see them at their work, to try their work shoulder to shoulder with them, or to do work like theirs, creates a bond of sympathy. Again, it creates interest in the social group, for all types of workers are becoming more and more dependent on one

another because specialization means increasing dependence on one another.

Again, vocational-guidance material has a value in enriching experience because it contributes to a better citizenship. The man who is sure his vocation is a good one, sure he likes his work, and is proud of it, is a better citizen than he who wishes he had somebody else's job. The latter man scarcely pulls his own weight in society and frequently he is one whom society must help. The first man not only pulls his own weight, but, because of his confidence, his joy in life, and his optimism, he is a contributor to the social life of which he is a part.

It must be already apparent that we are discussing a scheme whereby vocational guidance is brought about through material presented as a part of the curriculum. But such material is not a thing far separated and apart from the other work of the curriculum. Because vocational guidance is based on some of the real wants of man it becomes a motive for making live-problems. The working out of such problems involves research, reading, writing, calculation, composition, and spelling; it is joined with the development of our social life, and even literature has a fund of material that is closely connected with the life of industry. In the elementary school the vocational-guidance material is a natural part of the problems worked out in connection with industrial life. When fourth-grade pupils look into the matter of the meat-packing industry, they become interested in the kind of work done and they find out about the conditions of the work. Such contact with industry furnishes a gradually growing consciousness of vocational life. In the elementary school this material is secondary in its purpose, but in the intermediate and secondary schools it becomes the direct motivation of many of the problems taken up.

The discussion implies that the vocational-guidance material is not a separate course, not a separate study, and is not even given special time of its own in the day's program, but it is a part of the work in industrial arts. In this way it is closely connected with vitally related material. Every time new matter is framed up and made a distinct study or course by itself it becomes organized along hard-and-fast logical lines, and fences are erected between

it and other material—it destroys unity but makes for uniformity, it becomes perfect from the organizer's point of view but dead and without flexible points of contact from the pupil's point of view.

It has been suggested that a part of the appreciation of a vocation is to be obtained through some practice in that vocation. There is no doubt that the doing of some phase of an occupation will give one a clearer idea of what it means, but how far that idea is valid in helping one to accept or reject an occupation is not known. To do a thing a few times may, because of its novelty, only make one want to do it more, while if carried to a "practice limit" it will have the opposite effect. Without experimental verification it would appear as if enough practice should be obtained to do away with the novelty of the situation.

Teachers now complain of overwork. How, then, can they in justice be asked to take up a new thing? My answer is that teachers should stand ready to take up any material that has a vital relation to the wants and interests of man as manifested in his social life. They might well hesitate if they are asked to put the new material up as one more little jugful of mental pabulum to be doled out by the spoonful at designated times. But when it is tied up with vital life-problems it falls into its natural place and is no longer a burden.

It does not become, then, a problem on the part of the teacher of selecting the individual for a position; it does not mean that he or she tries these different tests or plans on the pupil for the purpose of finding out which one will fit. Rather these wisely chosen situations are put up to the pupils in the natural course of the social life they are living, and because of their own aptitudes and abilities they react in the direction of the vocation that makes the strongest appeal to them. Such may be the basis that leads to the true "vocational call."

Therefore, because of the great demand of our social life that a high standard of efficiency among workers be obtained, because democracy demands equal opportunity for all, because it contributes to the feeling that greatest ability should take the greatest responsibility, and because it has material of real educative value, we believe the curriculum is under obligations to assume the work of

vocational guidance. When it does so, the method of vocational guidance is changed from the old form in which the teacher discovered and directed, to a new form in which the pupil grows into a realization of his ability and of his place and opportunities in the social and industrial world.

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MEASURING PROGRESS

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Progress is determined by the interval between two successive positions occupied by a body moving along a scale of measurement. Our difficulty arises in determining an accurate scale of measurement.

Results are surely comparable when a quality or an achievement is at different intervals measured by the same standard. If the pupils of a fourth grade are given a certain test in arithmetic in October, 1912, and the same pupils are given the same test each succeeding year, the results are undoubtedly comparable, if graded by the same person each time.

This procedure was followed in our schools in testing progress made in arithmetic and spelling. The accompanying charts (Figs. 1–4) show the percentage of pupils who in October, 1912, and in October, 1914, made grades below 60, in the 60's, in the 70's, in the 80's, and in the 90's.

An examination of Fig. 1 shows that 44 per cent of the fourth-grade pupils made grades below 60 in a certain arithmetic test in 1912, while 8 per cent of them made grades above 90.

In 1914 these same pupils were found in the sixth grade and were given identically the same test and their papers were graded by the same teacher who graded them in 1912. Fig. 1 shows that none of these pupils made grades below 60, while 32 per cent of them made grades above 90. As should be expected, there is a very decided improvement.

Figs. 2 and 3 show the results from tests of the fifth grade repeated in the seventh grade with the same pupils. Fig. 2 shows the comparative results where the test consisted entirely of written problems. Fig. 3 shows the results where the major portion of the test consisted of definitions of such terms as decimal, dividend, etc.

The results show that the fifth-grade pupils made a decided improvement in their ability to reason out and solve problems (Fig. 2), while the facts that they memorized were almost forgotten within two years.

These experiments suggest that the ability to reason is a more permanent acquisition than the ability to reproduce facts. All will agree that the former is far more important than the latter and hence should receive the greater emphasis.

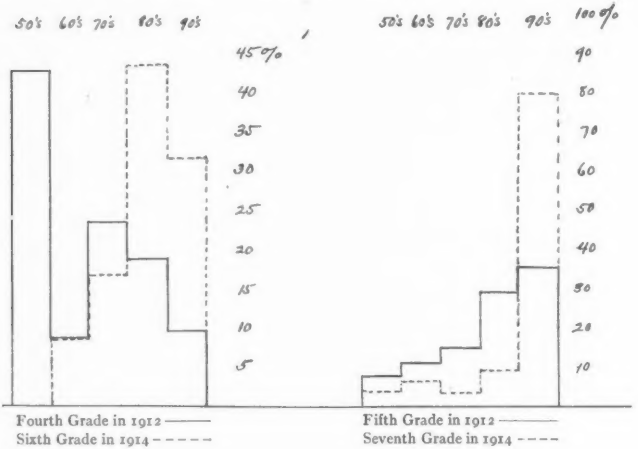

FIG. 1

FIG. 2 (Problems)

The improvement made by the sixth-grade class of 1912 is shown by the relative achievements of the children in the eighth grade in 1914. In this case, also, the same test was given after a period of two years to the same pupils. The papers in both tests were graded by the same teachers.

SPELLING

A similar study was made of the progress of pupils in spelling. In 1912 a certain twenty words were spelled by the pupils of the fourth grades. After two years these pupils were found in the sixth grades and these identical words were pronounced to them. The results of the two tests are shown in Figs. 5–7.

A study of these curves suggests that the experiences of the fourth-grade pupils in the fifth and sixth grades made no improvement in their ability to spell a certain twenty words once studied in the fourth grade. In fact, the results in any grade show that the pupils do not spell a word list as well after a school experience of two years as they did during the year in which such words were studied. In other words, the ability to master the words of a sixth grade does not depend very much on what words were studied in

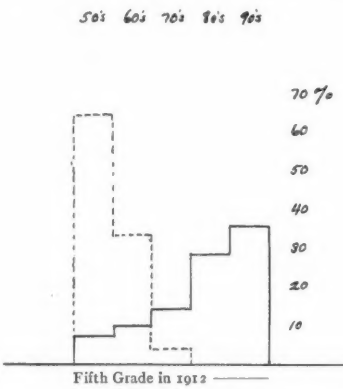

FIG. 3 (Definitions)

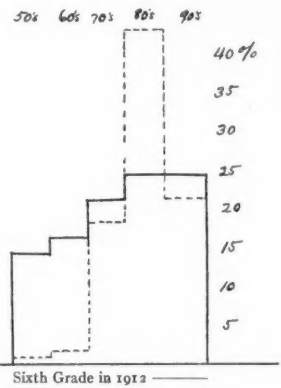

FIG. 4

earlier years. If this be true, may it not be that pupils who fail to make the required standard of one grade in spelling should be promoted to the next, provided they have worked faithfully? Will anyone contend that a pupil should be required to repeat an entire year or semester because he failed to meet the usual requirements in spelling only?

MEASURING RESULTS IN TEACHING GEOGRAPHY

In October, 1914, the pupils of the 6 A class were studying South America. The superintendent and one of the sixth-grade teachers tried a rather new plan in teaching geography to one of these sixth grades.

It was agreed that little attention should be given to mere fact-questions as such. The emphasis each day was to be placed on

thought-provoking questions. No more than three such questions should be assigned for study on any day. The pupils were given such questions twenty-four hours before they attempted to discuss

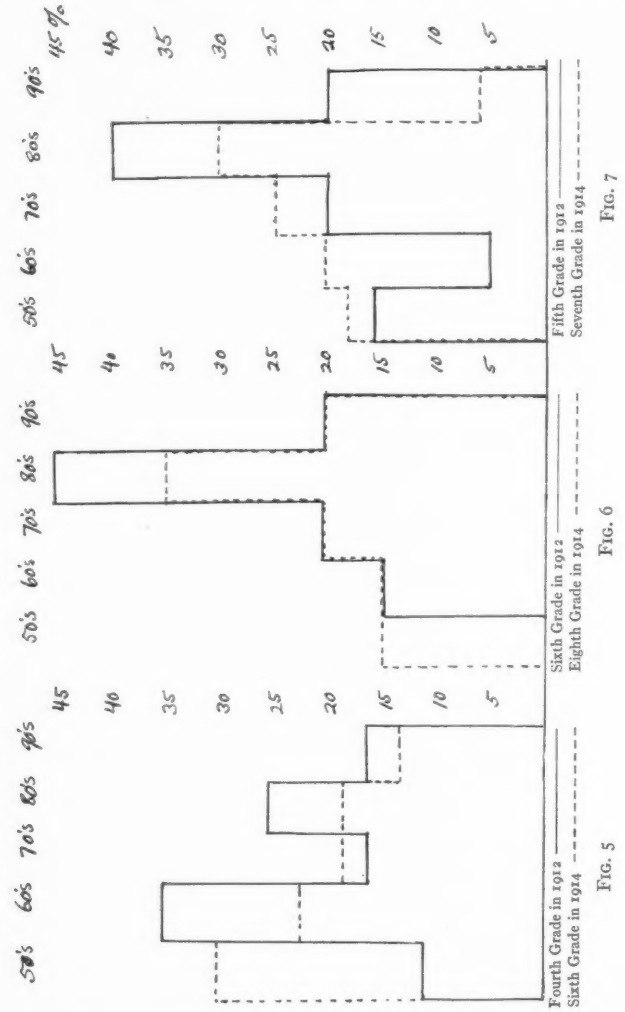

FIG. 5

FIG. 6

FIG. 7

them. They were expected to look up any facts bearing on the questions. During the recitation the pupils were encouraged to

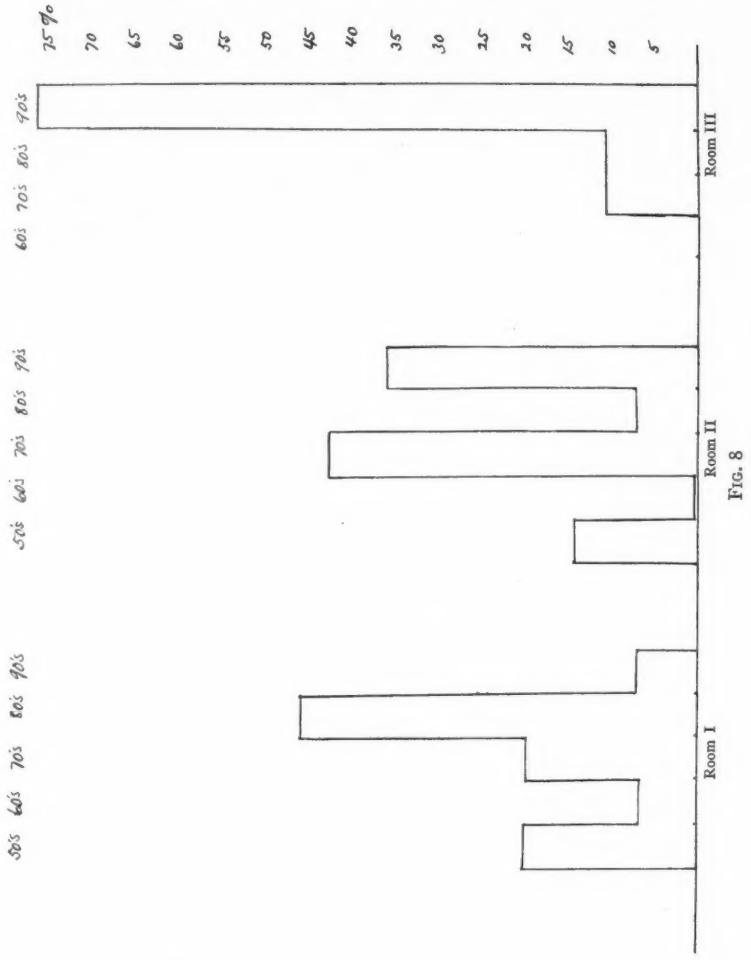

FIG. 8

criticize a recitation by asking the pupil who recited some question that would show the weakness of the position that he took.

No pupil was permitted to supply the information necessary for a complete recitation. Occasionally a question was laid aside for further study.

This kind of work was continued for about twelve weeks. After the continent of South America was completed by all of the sixth

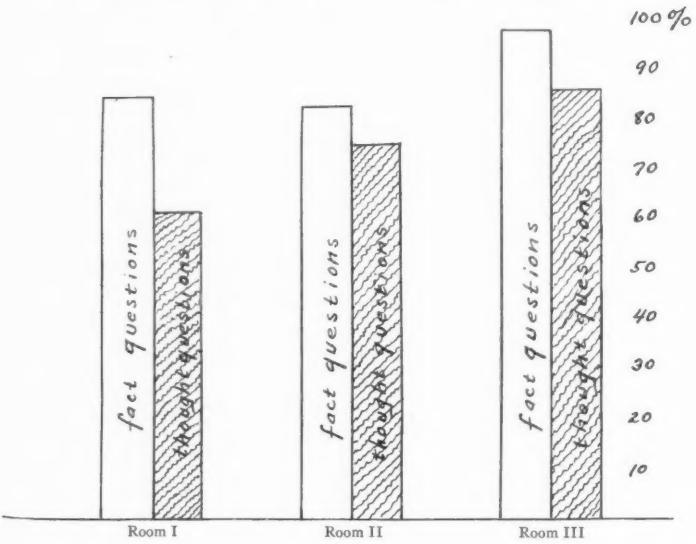

FIG. 9

grades, the superintendent formulated a test consisting of three fact-questions and three thought-questions as follows:

1. Name five countries in South America.
2. What oceans touch South America?
3. In what zones does South America lie?
4. What country of South America has been most progressive? What are the reasons for its progress?
5. What reasons can you give as to why the Guianas do not rank among the most important countries of South America?
6. Why is there such a variety of climate and products in the tropical Andean countries?

This test was given to the class in which the experimental work was done and to two other sixth grades. The papers written were

all graded by a teacher who knew nothing about the experiment. The standing of each room is shown in Figs. 8 and 9.

Room III is the room in which the experimental work was done. It will be noticed that none of the pupils in this room received grades below 70, while 75 per cent of them received grades above 90.

We were interested to learn whether the pupils in Room III, where the thought-provoking questions were emphasized, had neglected the facts on which all reasoning must be based. As each question received a separate grade on each pupil's paper, it was easy to determine their success along this line. Correct answers to the first three questions required that certain facts be held in mind. The pupils in Room III averaged 96 per cent on these fact-questions and 85 per cent on the last three or thought-questions. The pupils in Room I averaged 83 on the fact-questions and 60 on the thought-questions. The pupils in Room II averaged 83 on the fact-questions and 70 on the thought-questions.

No one would contend that such an experiment proves anything conclusively. Doubtless all will agree that these results are food for thought. Pupils may by one process or another accumulate a large number of facts, but if they have not learned how to organize or use such facts, they have gained little of value. On the other hand, if pupils learn to reason from day to day, they are compelled to use facts in order to draw logical conclusions. Pupils will become interested in geography when they see things in their proper relation, when the subject-matter is presented in the form of problems for solution.

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